NASA Procedural Requirements

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COMPLIANCE IS MANDATORY

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Subject: NASA Environmental Management System (EMS) w/Change 2 (04/26/2006)

Responsible Office: Environmental Management Division

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APPENDIX Z. Part 1. NASA Internal EMS Review Guidance

Z1.1 Introduction

a. Part 1. NASA Internal EMS Review Guidance (Part 1) is intended to serve as general guidance to Centers on satisfying the requirements for an internal EMS Review process.

b. Part 1 provides information on the NASA EMS review process. The use of a Standard Operating Procedure (SOP) for EMS reviews (sample provided in Part 1, Attachment Z1.1) and the application of the NASA Environmental Management System Checklist and Forms (see Appendix Z, Part 2), in order to satisfy the Center EMS review requirements of NPR 8553.1 is the focus of Part 1.

c. Part 1 is not intended to replace or provide comprehensive content on the actual practice of conducting EMS and management system reviews, audits or assessments. Formal training in the practice is recommended for participants on EMS review teams and is commercially available generally ranging from 1 to 3 days in length for internal audit / review programs and up to 5 days (40 hours) in length for the development of accredited lead auditors / reviewers.

Z1.2 Center EMS Review Drivers

a. NPR 8553.1A requires Centers to conduct annual internal EMS reviews. This section discusses EMS review drivers for NASA in general and those that may vary depending on the Center.

Z1.2.1 Executive Order 13148

a. Executive Order 13148 (EO) requirements stipulate that an appropriate EMS framework will be used. All common EMS frameworks (government and private sector) include a form of review function. The review function evaluates if the EMS is conforming to the high level requirements that the EMS it is based on (at NASA, NPR 8553.1) and the detailed requirements that have been developed with the implementation of the EMS (at NASA, Center developed: EMS procedures, and other requirements and commitments).

b. The EO requirements also state that; once established the EMS audit process shall include performance measures. The EMS review process guidelines outlined in Part 1, along with use of the content from NPR 8553.1 Appendix Z, Part 2, provide Centers with an EMS performance measurement process.

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7 Executive Order 13148, Greening the Government Through Leadership in Environmental Management Sec. 401. ãWithin 24 months of the date of this order, each agency shall implement environmental management systems through pilot projects at selected agency facilities based on the Code of Environmental Management Principles for Federal Agencies and/or another appropriate environmental management system framework.à

8 Executive Order 13148, Greening the Government Through Leadership in Environmental Management Sec. 401. ãOnce established, environmental management system performance measures shall be incorporated in agency

facility audit protocolsà.

Z1.2.2 International Organization for Standardization (ISO)

a. NPR 8553.1 was designed to ensure that NASA's EMS is consistent with ISO 14001:1996, which requires periodic EMS audits. In the ISO community it is common practice to conduct annual internal reviews of EMSs.

b. ISO 19011 [9] establishes detailed guidance on the process of management system auditing. This extends from audit program design and implementation, to audit team members.

c. The International Accreditation Forum (IAF), which sets standards for national bodies accrediting ISO 14001 registrars, has published guidance[10] on the relationship between ISO 14001 management system conformity and regulatory compliance (the guidance has been included in Part 1, Attachment Z1.2). Clarity in the distinction between Center EMS reviews and Center compliance reviews is discussed further in Z1.3.3 below.

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[9] ISO 19011: Guidelines for Quality and/or Environmental Management Systems Auditing, International Organization for Standardization (ISO), 2002.
[10] The International Accreditation Forum (IAF), The Relationship Between ISO 14001 Management System Conformity and Regulatory Compliance, White Paper TC-30-04, 2004.

Z1.2.3 Self Declaration

a. Guidance for Centers that have decided to self-declare their EMS is provided in Appendix Z, Part 3. These Centers use the NASA Environmental Management System Checklist and Forms provided in Appendix Z, Part 2.

Z1.2.4 External EMS Recognition Programs

a. As noted above, ISO 14001 is an external recognition program that requires an internal audit process. The National Environmental Performance Track Program (NEPT), State Programs and other recognition programs require some form of EMS assessment, audit or review. NEPT has developed a checklist specific to the program.[11]

b. Many external recognition programs use EMS assessment, audit or review requirements as the primary means of ensuring the EMS meets program criteria.

c. When a Center participates in an external EMS recognition program, it will need to understand the specific and ongoing requirements for EMS assessment, audit or review.

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[11] Performance Track independent Assessment Protocol (http://www.epa.gov/performancetrack/ind_assessment.htm#current).

Z1.3 EMS Review Process

a. The EMS review process is comprised of a series of key components. The combination of program development, implementation, ongoing review and improvement and the competence of reviewers are needed for an effective review program.

b. An EMS review process does not require detailed or separate procedures for these areas. Part 1, Attachment Z1.1 provides a sample procedure to cover these areas.

c. In order to avoid confusion with other forms of evaluation, the term "review", as opposed audit or assessment, is used by NASA to describe the process of determining the level of conformance of a Center EMS to requirements. The review process is based on auditing principles and practices.

d. In developing, implementing, staffing and improving an EMS review process, consider the use of Center experience beyond the environmental office.

Z1.3.1 Developing an EMS Review Process

Z1.3.1.1 When developing an EMS review process, consider:

a. The objectives of the program:

1. Satisfying NPR 8553.1 requirements.

2. Continual improvement of the EMS through identification of areas of success and the identification of opportunities for improvement.
3. Demonstration of EMS conformance for self-declaration or external recognition programs.
4. Demonstration of the EMS for external stakeholders.

b. The extent of the program:

1. The scope of the review.

i. Over 3 years all elements of the EMS that apply to each Center sub-organization must be covered (see Z1.3.2 below).
ii. The environmental program limits of the Center EMS. How has the Center delineated the extent of the scope of the EMS in areas that may be a part of other management programs (e.g., hazardous materials management, OSHA requirements that apply to environmental functions)?
iii. Points of distinction between EMS review and compliance review (see Z1.3.3 below).

2. Frequency of review. Annual reviews are required, but depending on the size or complexity of the Center, a staggered review program that reviews the EMS in different Center sub-organizations over a 3-year timeframe might be more appropriate.
3. Review criteria. For self-declaration assessments, Appendix Z, Part 2 is the required minimum. As noted above in Z1.2.4, the requirements of any external recognition programs the Center participates in also need to be considered.
4. Results and findings from previous Center EMS reviews, and other sources that resulted in corrective or preventative actions, NASA Headquarters Environmental Management Division environmental functional reviews and third party or stakeholder input on the Center EMS.
5. Changes that have occurred or which are anticipated at the Center that may affect the EMS.

c. Program organization, responsibilities and resources:

1. The roles of the Center Environmental Office and other supporting groups (e.g. the quality management system office, institutional and infrastructure functions versus program functions and support contractors).
2. How the program is administered and led.
3. Resources considerations (human, technical and financial).

i. EMS review training, initial and ongoing. The program may need a periodic "refreshing of the ranks" to sustain itself.
ii. Availability of trained review staff and balancing the need for current and active reviewers with reviewer fatigue concerns. For larger Centers, the staffing level required to review all Center sub-organizations with an annual program (even if a sampling strategy is used over 3 years).
iii. Availability of added technical expertise as needed for specialized areas. For example, the Center Environmental Office and its support contractor may be able to maintain a desirable level of competency, independence and objectivity (see Z1.3.4 below for added discussion in this area) when reviewing operational areas at the Center. However, a different source of reviewers may be needed for review of the activities of the environmental office and its support contractor. Other sources of perspective may also be needed when considering the EMS review program itself.
iv. Use of contractor support, third parties or integrated teams (part contractor, part civil servant).
v. Travel time requirements where multiple locations exist.

d. Review program procedures and their implementation:

1. As with all procedures, striking the appropriate balance between detail to ensure a successful program and the need to provide program flexibility to allow for innovation and professional judgment. ISO 19011 and formal management system audit training programs provide a high level of detail that is useful to consider in the development of review procedures, but it is not necessary or potentially advisable to develop procedures of detail beyond Part 1, Attachment Z1.1. Too much detail can unduly restrict flexibility of approach.
2. Review program procedure(s) should be a reflection of how the EMS review process needs to operate in order to ensure that the Center's goals for continual improvement in environmental performance and the EMS are assisted by the review.
3. The review program procedure(s) should cover, to a degree, all of the major topic areas in this Appendix. The

preparation for and follow up after the review are as important for success as the selection of the review criteria and the actual process of review.

4. Implementation of EMS reviews generally follow a series of steps such as:

i. Appointing the review team leader.
ii. Defining the objectives, scope and criteria for the review.
iii. Selecting the review team.
iv. Initial contact with the organizations that are the subject of the review.
v. Review of documentation. Review background (e.g., previous review findings) and material provided by the organizations.
vi. Preparation of a review plan. How will the EMS review procedure(s) work for the specifics of the organizations being reviewed?
vii. Delegation of tasks and responsibilities to the review team members.
viii. Preparing working documents.
ix. Conducting the opening, periodic and closing meetings.
x. Working with guides and observers.
xi. Collecting and verifying information.
xii. Preparing findings.
xiii. Out briefings with senior management when appropriate.
xiv. Preparing draft review reports, soliciting clarifications, conducting review follow-up and issuing finalizing reports.
xv. Record keeping.

e. Follow up after the review:

1. How will findings be relayed to management of the organization being reviewed, senior management and incorporated into Center EMS management review processes? While NPR 8553.1 requires reporting to senior management and to the Center Director, it is up to the Center and EMS Representative to determine if and how the internal EMS review will be integrated with compliance review processes, and other ongoing environmental program reporting.
2. Will reporting be findings only, or are recommendations for corrective and preventative action and continual improvement of the EMS desirable? This is another area of defining the scope of the review. The process of developing corrective and preventive actions includes determination of route causes. Reviewers may be able to assist in root cause determination, but the extent of this role (if any) should be clearly defined.
3. How will review records be maintained? The means of verification of findings and FOIA considerations need to be considered. Draft reports and follow up may be best treated separately from final reports.
4. When will a finding be considered closed? Is provision of a plan to resolve a finding sufficient, provided that it has been entered into an acceptable corrective action process? Or, is documentation of resolution required?

Z1.3.2 Review Frequency

a. Centers are free to determine how they will review all elements of their EMS for conformance with NPR 8553.1, as applicable to internal sub-organizations, over a 3-year period. Considerations include:

1. While a Center is not required to conduct an annual EMS review if a Headquarters Environmental Management Division (EMD) environmental functional review (EFR) is conducted that year, this does not mean that areas of the Center, which EMD visits during the EFR, are exempted from the 3-year internal review cycle. The EFR is a high level review that does not necessarily conduct a comprehensive review of all the applicable NASA and Center level EMS requirements that apply to the organizations that are visited.
2. Centers are responsible for ensuring that for each sub-organization across the Center, a determination has been made as to which EMS elements (and therefore the actual clauses of NPR 8553.1 and any Center developed EMS requirements) apply. With this determination in mind, the details of how the Center will review conformance with applicable requirements should be scheduled.
3. A common approach to review programs is to develop a sampling strategy so that each year a combination of applicable EMS elements and / or combination of sub-organizations are reviewed. For example, documentation and its management in general could be reviewed across many organizations at the same time, or all applicable EMS elements could be reviewed one organization at a time over 3 years.

4. Try not to think of the EMS review program as a once a year event. Adapting the program to slow versus busy times for different organizations can help to reduce the stress on review teams and the organizations being reviewed. Co-ordination with other environmental review and monitoring programs can assist as well.
5. Areas of weakness in the EMS, one time or ongoing, may be cause to increase the review frequency for an organization. This may also occur for a group of organizations, if for one or more elements there is more widespread concern.

Z1.3.3 EMS Reviews and Compliance Reviews

a. While both EMS reviews and compliance reviews occur, they have distinct and separate processes and purposes. Both require a number of the some skills and knowledge but there are also distinctions that need to be maintained. This is why the guidance noted in Part 1, Attachment Z1.2 was developed. This guidance specifically targets certification bodies, but the guidance on how to separate EMS audits from compliance audits is applicable to internal EMS reviews and compliance reviews. Reviewers need to be cognizant of when they conducting an EMS review versus a compliance review.
b. A EMS review considers compliance issues as an indicator of systemic weakness, and the review seeks to understand if the failure to comply is a possibly a result of EMS element problems: (for example: a failure to communicate policy commitments, lack of awareness, failure to identify a change in requirements or their applicability to an environmental aspect or impact, problems with resources allocation, ineffective operational controls).
c. When conducting EMS reviews the review process and the review team should have clearly defined how to approach any observed or potential areas of non-compliance.

Z1.3.4 Competency, independence and objectivity

a. Confidence and reliance in the EMS review process depends on the competence of the review team. The team typically consists of a lead reviewer, other reviewers, associated technical experts and guides.
b. The lead reviewer should meet minimum requirements, even if operating as a lead working towards accreditation under the watch of another more experienced reviewer. Lead reviewers need to be able to take the procedure(s) that have been developed as the framework for an EMS review and apply them in the execution of the review program.
c. The review team supports the lead reviewer and the technical experts and guides support the team.
d. No strictly defined "formula" exists for the ideal EMS reviewer. Competency is a combination of education, work experience, training (specific to EMS audit and review, as well general environmental) and review experience. Understanding / appreciation of NASA, the Center and the operational culture is an important dynamic as well.
e. The ideal knowledge and skills for team members needed to conduct effective internal reviews will often be a balancing act. The person with the highest understanding of how a Center organization works and satisfies EMS requirements will generally not be able to provide independent or objective comment. Conversely, a fully independent reviewer may be able to bring fresh perspective and the benefit of lessons learned in other settings, but will have greater difficulty with the context and at times the technology of NASA, which may prove a hurdle they have to overcome. For these reasons, a blend of review team members from different organizations and areas of specialization is a good starting point.
f. Staff and contractor support within the Center Environmental Office will generally not be able to effectively evaluate the parts of applicable EMS elements within the office. In order to identify weaknesses, and opportunities for improvement in the EMS components in the Environmental Office, reviews should consider using non-office resources (e.g., Center staff with no responsibilities tied to the office).
g. The Center Environmental Office will play a role in all elements of the EMS but in keeping with the EMS focus on the actual activities of staff across the Center, detailed execution that results in improved environmental performance is outside most direct Environmental Office activities. Therefore, Environmental Office staff should generally be able to review parts of the EMS outside of the office over which they do not have direct control. For example, if hazardous waste management has been identified as a high priority aspect by the Center, Environmental Office staff may not be able to review the process by which the risk ranking was completed, objectives and targets were set and the environmental management program was created, but the execution of the program outside of the office and across the Center could possibly be reviewed by the office. Or, a NASA on-site contractor that does not provide general environmental support services to the Environmental Office at a Center could provide review of the parts of the Center they otherwise have no contact with.
h. Ongoing review of the EMS review program itself is another area where objectivity and independence needs to be considered. The internal EMS review team cannot objectively review its own practices and performance on an ongoing basis. To obtain an objective review, consider Center resources with audit or review program

expertise (e.g., the quality management system office) or an external source (e.g., an EMS representative from another NASA Center that reports to your Mission Directorate). This specific review activity can be conducted independently from other review activities.

i. The evaluation of individual reviewers and as a collective group should also be considered as a specific area that will require a unique approach. Reviewer evaluation should not be treated as a primarily human resources function, but rather with a needs assessment process as is required under NPR 8553.1 Chapter 4.2.

Z1.4 EMS Review SOP

a. The sample EMS review standard operating procedure (SOP) provided in Part 1, Attachment Z1.1 is a refinement of the October, 2000 NASA Environmental Management Division SOP for EFRs. The EFR SOP has been identified as a model for evaluating an EMS by The Office of the Federal Environmental Executive (OFEE) and the Executive Order 13148 Interagency Work Group.[12]

b. The EMS review SOP (as noted above in Z1.3.1) is not intended to define the finer points of execution of an EMS review. It is designed to provide a degree of structure while allowing flexibility. If a Center chooses to use Part 1, Attachment Z1.1 as a model to base its internal EMS review procedure(s) it will need to consider if additional detail will assist in achieving beneficial consistency in the review process.

c. The SOP is based on the assumption that a Center will review applicable EMS requirements at Directorates / sub-organizations at the Center, one at a time with reporting to senior management for the Center on a more periodic basis.

d. The SOP can be adapted with minimal changes to include multiple sub-organizations or an EMS element across multiple sub-organizations.

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[12] Executive Order 13148, Greening the Government Through Leadership in Environmental Management Sec. 306. ãInteragency Environmental Leadership Workgroup. Within 4 months of the date of this order, EPA shall convene and chair an Interagency Environmental Leadership Workgroup (the Workgroup) with senior-level representatives from all executive agencies and other interested independent Government agencies affected by this order of the date of this order, EPA shall convene and chair an Interagency Environmental Leadership Workgroup (the Workgroup) with senior-level representatives from all executive agencies and other interested independent Government agencies affected by this order.à

Part 1 Attachment Z1.1. Sample: Standard Operating Procedure for Internal EMS Reviews

This Sample Standard Operating Procedure is provided as an example for use a model for Centers to develop Center procedures for internal EMS reviews.

AZ1.1.1 Purpose: The internal EMS review process is designed for two purposes:

a. To provide insight regarding conformance with the NASA Environmental Management System and with planned arrangements (Center defined EMS requirements).

b. To comply with the requirements of Executive Order 13148

AZ1.1.2 Scope:

This procedure will be used by Center personnel in the conduct of internal EMS reviews.

AZ1.1.3 Authority:

a. NPR 8500.1, NASA Environmental Management.

b. NPR 8553.1A, NASA Environmental Management System.

AZ1.1.4 References:

a. NASA Environmental Management Review Checklist.

b. NPD 1210.2, NASA Surveys, Audits, and Reviews Policy.

c. ISO 14001: Environmental Management Systems - First edition, Specification with Guidance for Use, International Organization for Standardization (ISO), 1996, and Second Edition, Requirements with Guidance

for Use, International Organization for Standardization (ISO), 2004.

d. ISO 19011: Guidelines for Quality and/or Environmental Management Systems Auditing, International Organization for Standardization (ISO), 2002.

e. Executive Order 13148, Greening the Government through Environmental Leadership.

AZ1.1.5 Revision Information:

a. This document and its revisions shall remain effective for no more than three years from the date of approval/signature.

b. Document History Log

Status	Revision	Effective Date	Comments
Baseline	1.0	Month Day, Year	None

AZ1.1.6 Definitions:

a. Review Plan. An outline that describes the review activities to be conducted.

b. Review Team. Comprised for a lead reviewer and/or additional internal reviewer(s).

c. EMS Audit. A systematic, documented, and periodic verification process of objectively obtaining and evaluating evidence to determine whether an organization is conforming to its EMS and for communicating the results of this process to management. The environmental management portion of environmental functional reviews, Center internal annual EMS reviews, and independent self-declaration assessments, are forms of EMS audits.

d. Center Internal Annual EMS Review. A verification process of objectively obtaining and evaluating evidence to determine whether an organization is conforming to its environmental management system and for communicating the results of the process to management.

e. ISO 14000. A series of environmental management standards developed by the ISO. The ISO 14000 standards are designed to provide an internationally recognized framework for environmental management, measurement, evaluation, and auditing. The standards are designed to be flexible enough to be used by any organization of any size, in any field.

f. ISO 14001 Environmental Management Systems. Requirements with Guidance for Use - outlines the requirements for an EMS as developed by and agreed to by the ISO.

g. ISO 19011 Guidelines for Quality and/or Environmental Management Systems Auditing. Outlines techniques for developing and managing EMS audit programs and audits and provides recommendations for auditor competence.

h. Objective Evidence. Qualitative or quantitative records or statements of fact pertaining to an item or service or to the existence and implementation of an environmental management system component, which are based on observation, measurement, or test which can be verified.

i. Observation. A statement of fact made during an EMS review and substantiated by objective evidence.

j. Planned Arrangements. Are the commitments made by an organization to manage its environmental issues. A periodic review of the EMS is needed to verify that the EMS is properly implemented and that it continues to conform to planned arrangements for environmental management.

AZ1.1.7 Procedure:

AZ1.1.7.1 General

a. Internal EMS Review Frequency

1. The Internal EMS Reviews shall be conducted annually. These all areas of the EMS shall be evaluated at

least once as applicable across operating Directorates over the 3-year cycle.

2. On years when a NASA Headquarters Environmental Functional Review (EFR) is conducted, the EFR satisfies the requirement for annual EMS review activity but does not remove the obligation that all operating Directorates must be internally reviewed during the 3-year cycle.
3. The Center Environmental Manager shall maintain the proposed schedule for the visiting Center Directorates, in coordination with EMS review team members. This schedule shall be updated and modified as required.
4. Applicable individuals, groups and/or contractors of the Center may be notified at any time regarding the time in which the Directorate will be reviewed. However, notification should not be earlier than 3 months weeks nor later than three weeks prior to the review.
5. Internal EMS Reviews may be rescheduled due to circumstances beyond the control of the Directorate, such as mishaps or furloughs. The Internal EMS Review should be rescheduled as soon as practical by the Center Environmental Manager and must be approved by the Center Director.
6. On an annual basis, the Internal EMS Review process shall be reviewed and updated as required. Those personnel who are independent of those having direct responsibilities for the EMS Internal Review shall conduct review of the Review process.

b. Criteria

1. The EMS shall be evaluated in accordance with the NASA Environmental Management Review Checklist.
2. The Checklist is constructed with the intent of satisfying:

i. NPR 8553.1A, NASA Environmental Management System.
ii. ISO 14001:1996, Specification with Guidance for Use, International Organization for Standardization (ISO), 1996 and
iii. Other selected EMS standards and programs to which the Center subscribes.

3. The individual sections of the Checklist are intended for use as applicable in preparation for review activity. The Forms are intended for use during the conduct of the review.

c. Reviewers

1. Number of Reviewers

i. The Internal EMS Review team will be represented by 2-4 personnel. Those personnel will be responsible for the overall conduct of the Internal EMS Review. One of these personnel will be established as the Internal Review Team Leader, and will be responsible for the overall review.
ii. Trained Center employees, or contract personnel, who are independent of those having direct responsibilities for the department or area being assessed, will conduct the Internal Review.
iii. Where resources are available, a Center senior environmental professional shall be added to the team.

- This professional shall be sufficiently independent from the Directorate being assessed to avoid conflicts of interest.
- Consideration for selection of the Center professional should include perceived strengths/weaknesses at the site, as well as the timing of the Internal Review.
- Specific training and other requirements of this procedure regarding the Center professional can be waived by the Review Team Leader with concurrence from the Center Environmental Manager.

2. Training and Experience

i. Review team members shall have applied experience in environmental management.
ii. The Internal Review Team Leader and other team members shall have obtained formal training in EMS Auditing.

d. Resources

1. Where available, digital camera and video camera equipment can provide enhanced documentation.
2. Where reviewers will be expected to enter hazardous areas, the Directorate is required to provide them with the necessary personal protective equipment for that environment, such as safety glasses, safety shoes, respirators, and/or hard hats.

e. Safety Considerations

1. Internal EMS Reviews may involve the sporadic exposure to various hazards in the workplace. The reviewers shall be sufficiently aware of these hazards, through training or other experience, so as to protect themselves from injury or illness.
2. Reviewers are responsible for the use of personal protective equipment as required and/or prudent.
3. At no time shall any reviewer enter an area with uncontrolled hazards (e.g. IDLH[13] environment, permit-required confined space).

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[13] ãIDLHà describes atmospheric or other conditions, which are Immediately Dangerous to Life and Health, such as oxygen-deficient confined spaces.

AZ1.1.7.2 Review Plan:

a. The EMS Internal Review Team Leader will prepare a Review Plan for distribution to the Review Team.
b. The Review Plan should be flexible in order to permit changes in emphasis based on information gathered during the review, and to permit effective use of resources. The Plan will include the following:

1. Identification of the EMS components to be reviewed
2. Review scope of activities
3. Dates and times for the In-briefing, End-of-Day Briefings (if applicable), and Out-briefing and locations
4. Names of the review team members and component assignments
5. Names of those being interviewed and their contact information
6. Pertinent reference materials such as standards, procedures, forms, and checklists
7. Past review and EFR reports

AZ1.1.7.3 Pre-Review Activities:

a. The Internal Review Team Leader may complete and/or delegate the following activities prior to the Internal EMS Review. Alternatively, these tasks may be completed as part of the "on-site" portion of the review.
b. Scheduling meetings with critical site personnel

1. In-briefing with key Directorate staff
2. Out-briefing with key Directorate staff
3. Other meetings as required by reviewers, or recommended by the key Directorate staff because of perceived scheduling difficulties

c. Review of applicable Directorate documentation, including but not limited to:

1. Relevant Directorate guidance, and procedures documents
2. Specific permits as requested
3. Directorate organizational charts

AZ1.1.7.4 On-Site Review

a. a. In-briefing

1. Conducted by Internal Review Team Leader
2. Attendees include key Directorate staff and the Review Team.
3. Description of purpose and scope of Internal EMS Review, as well as expected products or outcomes
4. Discussion of schedule and activities, as well as any resource needs or issues.

b. Daily Review Activities

1. Internal EMS Review

i. The Internal EMS Review utilizes the NASA Environmental Management System Checklist

ii.) Reviewers will conduct interviews and/or observe operations with personnel to assess various components of the program with respect to the checklist. These personnel include: Directorate Management, Directorate personnel responsible for execution of environmental functions (civil servant and contractor) and Managers and operations personnel in areas of environmental significance. (See Note box on Conducting Interviews)

iii. Reviewers will review relevant documents as necessary to assess the components of the environmental management program within the Directorate. Review of documents will be annotated in reviewer notes with any findings or observations.

iv. Findings, observations, and other notes from the Review will be documented using checklist sheets located in the Environmental Management System Checklist Forms in Appendix Z, Part 2.

b. End-of-Day Briefing: It is at the discretion of the Internal EMS Review Team Leader to decide if it is necessary to conduct end-of-day briefings. The following procedure may be used.

1. Conducted by Internal Review Team Leader
2. Attendees include key Directorate staff and the Review Team
3. Discussion by each reviewer of their activities and findings
4. Discussion of next day's schedule and activities, as well as any resource needs or issues.

c. Preparation of Findings/Observations and Out-briefing

i. Findings/observations of reviewers will be combined and reviewed by the Internal Review Team Leader. This review will consider the accuracy, objective evidence, and authority for each finding.

ii. Classification Categories

- Findings of non conformance with review criteria
- Significant: Can result in a direct and immediate threat to human health, safety, the environment, or the Center's mission -- requires immediate attention
- Policy: Noncompliance with NASA policy, guidance or instruction documents
- Observations
- Positive: Activities that go beyond what is required by a particular environmental standard
- Good Management Practice (GMP): Although not required by regulation, these are recommendations that, if implemented, could help reduce the potential for enforcement action or improve local environmental programs
- Program Health Indicators
- These indicators are a subjective evaluation of an element or clause by the reviewers. They are provided to aid Directorate and Center management in understanding the gravity[14] of specific findings of non-conformance.
- Program health indicators are provided using a "stop-light" concept within the following guidelines:
- Healthy (green) -- good program, on-track in meeting requirements
- Needs improvement (yellow) -- program does not meet requirements in one or more areas
- Requires immediate attention (red) -- program does not meet major requirements in more than one area

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[14] It is recognized that a media area could be rated ãhealthyà and still have de minimus findings of non-conformance.

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iii. If Contract personnel have been solely involved up to this point in the Internal EMS Review, it will be necessary for Center personnel to review the results prior to the Out-briefing.

d. Out-briefing

1. Conducted by the Internal Review Team Leader, with assistance from other team members.
2. Attendees include key Directorate staff and the Review Team
3. Agenda:

i. Purpose and Scope of Review
ii. Environmental Management System Review

- Positive Observations
- Findings
- Program Health Indicators

iii. Future Actions

4. As part of quality assurance for this process, provide the Directorate Management with the opportunity to provide feedback.

AZ1.1.7.5 Post-Visit Activities

a. Internal EMS Review Report

1. Draft

i. The Internal EMS Review Report is structured based on the format provided in EMS Review Report.doc
ii. Provided to Directorate within 4-6 weeks

2. Comments from Directorate

i. Provided to Review Team Leader within 4 weeks

3. Resolution of Directorate Comments

i. Completed within 2 weeks

4. Final Report

i. Final report will request a Directorate action plan within 90 days for any findings, including estimated completion dates and notification of final closure for each finding (Note: Directorates may coordinate action plan with the Center Environmental Office)
ii. Report will be sent to Center Environmental Manager
iii. The Center EMS representative will coordinate the assembly individual Directorate reviews for Reporting to Center Senior Management and the Center Director

b. Follow-through by the Center Environmental Office

1. The Review Team Leader will track all findings until closure is documented by the Center.
2. "Significant Findings" may, at the discretion of the Team Leader be confirmed closed for the Directorate by a secondary targeted visit.
3. The Review Team Leader will compile the EMS records listed below, and enter the records into the Center Document Management System.
4. The EMS Representative shall review all submitted comments on reviews for consideration in the revision of this SOP.

AZ1.1.7.6 Environmental Management System Records

a. The following records are generated in this process, with retention and disposal as identified below:

Record	Action	Location	Retention
In-briefing Presentation Out-briefing Center Comments on Draft Report Final Report Review Critique NASA Environmental Management System Checklist	All records (electronic or hardcopy) are maintained by the Review Team Leader until the end of the specific Review. Once all records are received, they will be compiled into a single final Review record for archival.	Individual records are maintained by the Review Team Leader in their specific filing system. Once compiled, the final Review record shall be archived into the Center Document Management System.	Hardcopy records are maintained by the Review Team Leader until archived into the Center document management system and then destroyed. The final Review Record shall be maintained in the document system for at least 10 years, and shall be disposed only with the documented approval of the Center Environmental Manger.

Signature below indicates approval and authorization for use, as specified within this document.

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Part 1 Attachment Z1.2. International Accreditation Forum Issued Guidance

This attachment is a reproduction of the text of the International Accreditation Forum Issued Guidance on the relationship between EMS assessments and regulatory compliance.

IAF	The relationship between ISO 14001 management system conformity assessments and Regulatory Compliance	Issue 1 2004-09-15

AZ1.2.1 Introduction

Since the publication of ISO 14001 in 1996, there have been many examples of organizations improving their level of regulatory compliance as a result of the structure and discipline of an environmental management system (EMS) conforming to the standard. Governmental agencies have also recognized the potential contribution of EMS implementation in some cases by either directly requiring implementation as part of regulatory compliance, offering relaxation of governmental oversight where an EMS is in place or otherwise encouraging their use.

Unfortunately, there has also arisen an expectation that certification of an organization's EMS as meeting ISO-14001 implies that the organization is in full compliance with all legal and regulatory requirements. This has led to concern and disillusionment when some organizations with certified EMSs have experienced environmental incidents or have otherwise been found to be out of legal compliance.

This paper does not seek to develop interpretations of the requirements of ISO-14001 but identifies the requirements of the standard that directly relate to regulatory compliance and explores what a certification assessment should cover in order to support a set of reasonable expectations by stakeholders.

For the purposes of this paper, the term "EMS" will be used to represent an environmental managements system

conforming to the requirements of ISO-14001 and "regulatory requirements" will indicate all legal and regulatory requirements related to an organization's environmental aspects and impacts. Clause references in this paper refer to ISO/FDIS-14001:2004.

Deliberate non-compliance (e.g. an organization decides to pay a fine and continue to operate without seeking to address non-compliance) should be considered a serious failure to support the policy commitment to regulatory compliance and should preclude certification or cause an existing ISO 14001 certificate to be suspended, or withdrawn.

Any organization failing to demonstrate their commitment to legal compliance through the elements discussed below should not be certified as meeting the requirements of ISO 14001 by the CRB.

AZ1.2.2 The requirements of ISO-14001 with respect to regulatory compliance:

ISO-14001 requires that an organization "commit" to compliance with all legal and regulatory requirements applicable to its environmental aspects and impacts. It further requires that the organization supports this commitment by identifying applicable regulatory requirements, determining how these requirements relate to its activities, products and services, evaluate conformity with the identified requirements and take action to correct any nonconformities that exist or occur. The standard also requires that this commitment and the related supporting activities are maintained on an on-going basis.

The specific clauses of ISO-14001 most important with respect to regulatory compliance are the following:

- public commitment to legal compliance (subclause 4.2);
- full detailed identification of legal requirements (subclause 4.3.2);
- how those legal requirements apply to the organization's environmental aspects (4.3.2, 4.4.6, 4.5.1);
- objectives/targets/programs (subclause 4.3.3)
- comprehensive evaluation of legal compliance (subclause 4.5.2);
- corrective and preventative actions where necessary (subclause 4.5.3); and
- management review (subclause 4.6).

AZ1.2.3 How should a certification body evaluate a management system with respect to legal compliance before granting certification and during the maintenance of certification?

Through the certification assessment process, a Certification Body (CRB) should evaluate an organization's conformance with the requirements of ISO-14001 as they relate to regulatory compliance and should not grant certification until conformance can be determined. The CRB should also, through an appropriate follow up program, assure that conformance in maintained during the certification period. The CRB auditors should evaluate the management of compliance based on demonstrated implementation of the system and not rely only on planned or expected results.

The following discussion identifies what should reasonably be expected on the part of the certification body in evaluating the management system with respect to regulatory compliance.

AZ1.2.4 A public commitment to legal compliance (subclause 4.2):

The CRB should determine if the following specific points are demonstrated with regard to the organization's environmental policy statement:

- that there is a policy;
- that it addresses 4.2 of ISO 14001;
- that it is approved by top management;
- that it is publicly available; and
- that it is subject to periodic review of its relevance and appropriateness.

AZ1.2.5 Identification of, and access to, legal requirements (subclause 4.3.2):

The CRB should determine whether the EMS has adequately identified and provides access to the specific applicable legal requirements, in sufficient detail to facilitate development and control of the management system and to enable a satisfactory evaluation of compliance. The CRB should also verify that these regulatory requirements are periodically reviewed in order to identify new and/or changed requirements and to accommodate any changes to the organization, its activities or products.

The CRB should check the completeness and relevance of identified legal requirements but the CRB is not responsible for verifying the identified legal requirements as being the final or definitive list. CRB assessment teams

should have sufficient knowledge of the applicable legal requirements that are relevant for the location and environmental aspects of the organization so as to identify significant omissions from their client's identified legal requirements.

AZ1.2.6 How legal requirements apply to the organization's environmental aspects (4.3.2):

The CRB should determine whether the organization understands how each legal requirement applies to its activities, products and services, and that the organization has considered this in establishing and maintaining the management system.

Determination by the CRB that the organization has sufficiently translated legal requirements into suitable EMS elements may come from an onsite walk-around, and by taking examples of significant aspects and following the trail back through the EMS to specific legal requirements. Then in the reverse order, by taking specific legal requirements and assessing how they are actually fulfilled within the normal operation.

The status of compliance may be determined from a number of sources, including reports of specific instances of non-compliance and the items in 4.6 of ISO FDIS 14001 (i.e. results of internal audits, communications including complaints, environmental performance (e.g. results of monitoring and measurement), objectives and targets, corrective and preventative actions, follow up from previous reviews, changing circumstances and requirements (including legal requirements), and recommendations for improvement).

AZ1.2.7 Objectives/targets/programmes (subclause 4.3.3):

The CRB should determine whether objectives and targets set within the EMS take into account legal requirements and that specific objectives and targets have been established as necessary to address any lack of compliance.

Where a significant non-compliance with regulatory requirements occurs, objectives, targets and programmes would normally be the appropriate way to resolve the non-compliances in a controlled and/or managed way.

In any case where the organization is not in full compliance with regulatory requirements (excluding minor, transitory deviations), in order to be considered in conformance with the standard, the objective of achieving compliance supported by appropriate targets and programs should have been established.

AZ1.2.8 Comprehensive evaluation of legal compliance (subclause 4.5.2):

CRB assessors assess conformance of an EMS to the requirements of a standard. They do not make a comprehensive evaluation of compliance, like a regulatory auditor, to determine the organization's compliance with regulatory requirements.

The CRB should determine whether the organization has established the necessary procedures and has fully evaluated its compliance with each of the applicable regulatory requirements. Part of this determination should consider that persons performing the compliance evaluation have appropriate knowledge of the legal requirements and their application.

The CRB should test the effectiveness of the evaluation through:

- sampling the organization's determination of compliance with examples of specific legal requirements;
- looking for evidence of compliance or non-compliance during other assessment activities (on-site assessments and audit of operational controls, etc.); and
- checking that the organization's evaluation of compliance has covered all of the identified legal requirements.

In some cases, compliance audit information is considered confidential or privileged. However, sufficient data on an organization's compliance with relevant legislation and regulations, gathered during the assessment process, are relevant and necessary to determine whether the organization's systems conform to the standard. "Affirmative statements" from the organization that it is in legal compliance are not sufficient for the purposes of certification.

In the event that certain specific data or other information related to legal or regulatory compliance are not made available to the CRB for review because of an assertion of legal privilege or their proprietary nature, certification should not be granted, or should not continue, unless the CRB can obtain demonstration by objective evidence that the full system requirements relating to legal compliance, covering the applicable section of the standard, have been effectively implemented by sufficiently documented and verifiable means. This would include at least a documented procedure for evaluating legal compliance, objective evidence of its implementation, objective evidence of compliance review by management and objective evidence of implementation of identified corrective and preventive actions.

AZ1.2.9 Corrective and preventative actions where necessary (subclause 4.5.3):

The CRB should determine that the organization has developed an appropriate corrective action procedure(s) and that regulatory non-compliances find expression in the corrective and preventative actions within the EMS. In the

absence of such a connection, the CRB should be concerned about the overall effectiveness of the EMS, and its ability to support the organization's environmental policy, objectives and targets.

If a non-compliance situation is more than a minor temporary deviation, then objectives, targets and programmes may have been established. In any case the EMS should demonstrate the ability to resolve non-compliances in a controlled and/or managed way.

AZ1.2.10 Management review (subclause 4.6):

The CRB should determine whether the organization has included in management reviews the status of legal compliance. This is to ensure top management are aware of the risks of potential or actual noncompliance and have taken appropriate steps to meet the organizations commitment to legal compliance.

AZ1.2.11 Conclusions

ISO 14001 Environmental Management System certification is a tool for the dynamic management and improvement of an organization's environmental performance. It is not a substitute for legal requirements, or legal determinations by a regulator or a court on matters on legal compliance. EMS auditors assess an organizations EMS pursuant the requirements of the standard, they do not provide an evaluation of legal compliance nor are they regulatory inspectors.

Certification of an organization's EMS indicates conformity with the requirements of the ISO-14001. This includes a demonstrated commitment to compliance with applicable legal requirements.

ISO 14001 certification cannot guarantee legal compliance but neither can any certification or regulatory scheme guarantee ongoing legal compliance;

ISO 14001 requires a public commitment to comply with legal requirements. It does not require actual compliance with the law as a pre-requisite to certification, or for maintaining certification;

ISO 14001 certification confirms that there is an effective environmental management system that provides an ongoing foundation and support for an organization's legal compliance.

In order to maintain stakeholder confidence in the above attributes of a certified management system, the certification body must assure that the system demonstrates effectiveness before granting or continuing certification.

The EMS can act as a dialogue tool between regulators and organizations, and become the basis for a trusting partnership, replacing historical adversarial 'them and us' situations. Regulators and the public want to trust organizations with a certified EMS, perceiving them as being able to constantly and consistently manage their legal compliance. An organization with an EMS certified to ISO-14001 should have the following attributes that would be on interest to regulators, the public and other stakeholders:

- a better knowledge of legal requirements;
- a better and broader knowledge and understanding of their environmental impacts;
- more consistent awareness, training and competence of personnel;
- better use and implementation of this knowledge in its processes;
- availability and consistency of information related to environmental performance;
- management of the risk of legal non-compliance;
- management of the risk to the wider environment;
- the use of structured and systematic corrective and preventive actions;
- more rapid improvement than would be achieved by focusing on legal compliance alone;
- ongoing independent assessment of their management of legal compliance;
- both internal and external methods of assessment and verification of their commitment to legal compliance that provides top management confidence;
- coverage of a wider range of issues than those addressed in specific legal requirements; and
- confidence in the management system to then allow for focus on actual environmental performance.

AZ1.2.12 Additional considerations

Auditor capabilities:

CRB auditors, in addition to basic auditor skills, should have appropriate competence in environmental issues including:

- environmental science;

- environmental management principles;
- environmental management tools;
- environmental laws and regulations
- environmental aspects of operations

Certainly, an auditor, in order to evaluate and EMS does not need to be an environmental scientist or be an expert in the specific industry or product or have detailed knowledge of every conceivable regulatory requirement. However, the levels of knowledge, education, training or experience in these areas should enable the auditor to:

- understand the environmental aspects and impacts of the candidate organization;
- understand how the management system is implemented to control these aspects and impacts and achieve its objectives;
- understand in general terms the applicable regulatory requirements;
- determine whether the EMS is effective in controlling is aspects and impacts

A one-week EMS lead auditor course will not be sufficient to impart this level of knowledge and understanding for someone without any prior environmental exposure. EMS auditor candidates should have some relevant experience in these areas before hire and the EMS lead auditor course should be a means to focus their knowledge toward the audit process.

When and auditor suspects a regulatory non-compliance:

Management system auditors should not perform regulatory compliance audits as part of ISO 14001 audits. Where auditors find suspected regulatory noncompliance issues, they should immediately notify the organization's Management Representative. Suspected regulatory noncompliance issues should be reviewed by the auditors to determine whether the EMS has appropriately identified and addressed them. Specifically:

- Is the organization aware of the condition?
- Has the organization determined whether the condition represents a regulatory compliance issue?
- Has appropriate corrective action been taken to immediately address the condition
- Have any required regulatory notifications occurred

The CRB should identify nonconformity if the EMS has failed to identify or appropriately respond to non-compliance situations.

How the CRB should respond to stakeholder complaints:

When a CRB receives a complaint from a stakeholder about the environmental performance of a certified organization they should:

- Report the complaint to the organization without delay and determine its validity
- Determine whether the EMS has recognized and adequately responded to the complaint or condition
- Determine whether the condition represents a nonconformity to the standard
- Follow up with the complainant to inform them of the outcome (while maintaining appropriate levels of confidentiality with the certified organization
- Take appropriate action where the EMS is found to be out of conformance.

It is the CRB's responsibility to report the complaint to the certified organization and to determine whether the management system continues to conform to the requirements of ISO-14001.

The organization is responsible for follow up and appropriate response to the complaint and to assure the continued conformance or correction of the system to the requirements of the standard.

The balance between office/paper auditing and on-site evaluation of the implementation of the system in the day to day activities of the organization:

Every EMS assessment involves evaluation of the planning, implementation and effectiveness of the environmental management system. This process requires that the system documentation be reviewed and that records be examined. The effectiveness of the system cannot be evaluated, however, without significant evaluation of its appropriateness and implementation in actual practice.

While the first stage of the assessment involves a determination of the completeness and readiness of the audit for

audit, in the vast majority of cases this cannot be realistically evaluated without the auditor's on-site exposure to the facilities, activities and products.

During the second stage of the audit, implementation must be evaluated in terms of how well the EMS controls environmental aspects at their point of occurrence. Further, much of the EMS relies on communication and commitment on the part of all appropriate personnel to the environmental policy, which can only be evaluated through observation of the routine activities of the organization.

The auditor then must strike a balance between paper review and evaluation of the EMS implementation during normal activities in order to make an adequate assessment of the effectiveness of the EMS. Unfortunately, there is no formula to define what the relative proportions will be, as the situation is different in every organization. However, there are some indications that too much of the audit time dedicated to paper review is a problem that occurs with some frequency. This could lead to an inadequate assessment of the effectiveness of the EMS and potentially to poor performance issues being overlooked and leading to a loss stakeholder confidence in the certification process.

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